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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,970	01/16/2004	Steven D. Bush	1776-0013	8323

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EXAMINER	
TUROCY, DAVID P	

ART UNIT	PAPER NUMBER
1762	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/759,970	BUSH, STEVEN D.	
	Examiner	Art Unit	
	David Turocy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *17-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: ___.

DETAILED ACTION

Election/Restrictions

1. Claims 17-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/11/2007.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5681391 by Mistrater et al, hereafter Mistrater in view of US Patent 6180310 by Pinsly, hereafter Pinsly and US Patent 6270850 by Cia et al., hereafter Cia.

Mistrater discloses a method for manufacturing a photoreceptor including providing a substrate to be coated with a charge transport layer ("CTL") layer, providing a tube having a upper opening sized to receive the substrate acting as an outlet, the tube having a inlet lower then outlet (see for example figures, Column 18). Mistrater discloses providing a circulating pump to force CTL solution through inlet and fill the tube with circulating CTL solution by way of the pump (Figures, column 12, lines 50-55). Mistrater discloses withdrawing the substrate from the tube at a pull rate and therefore

the process as taught by Mistrater necessarily exhibits a differential rate. Mistrater discloses the thickness of the CTL solution deposited is directed related to the relative velocity of the coating material in the space between the drum and the tube wall as well as the viscosity of the coating solution (Column 18).

Mistrater fails to disclose the particulars of the thickness control. However, Pinsly discloses a method for depositing a CTL layer on drum similar to that as taught by Mistrater, discloses variations in the viscosity of the coating can result in thickness variations during the coating (Abstract, figures, column 2, lines 5-11, column 6). Pinsly discloses during the coating process, solvent is evaporated from the coating solution and thus results in increasing the viscosity. Pinsly discloses during the coating process (including withdrawing) measuring the viscosity of the fluid, where when the viscosity changes a determined threshold (Column 6, examples). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Mistrater to measure the viscosity during the coating process because Pinsly discloses that variations in the viscosity results in coating thickness variation which results in unacceptable results.

Mistrater in view of Pinsly discloses adjusting the viscosity to control the thickness by the addition of solvent, however, the references fail to suggest altering the pump velocity to control the thickness.

However, Cia et al. discloses a method for improving dip coating processes by flowing solution between a substrate and a wall, analogous to that disclosed in the process of Mistrater (abstract). Cia discloses the coating speed, i.e. the relative coating

velocity, and the viscosity are related to the coating thickness uniformity (Column 4, lines 30-50).

Therefore, taking the references collectively, it would have been obvious to one of ordinary skill in the art to have modified Mistrater in view of Pinsly altered the relative coating speed due to the sensed viscosity because Pinsly discloses viscosity changes throughout the coating process results thickness coating variation and Cia discloses that the coating speed and viscosity are directly related to the coating thickness.

As for the limitation requiring altering the pump motor angular velocity, Mistrater suggests pull rate and initial flow rate of the material results in a relative velocity of the coating material, which affects the coating thickness. Therefore it would have been obvious to one of ordinary skill in the art to have altered the angular pump velocity to alter the vertical flow rate of the fluid in response to the sensed velocity with a reasonable expectation of successfully adjusting the relatively velocity of the coating material. The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375.

Claims 2-4: These limitations are discussed above.

Claim 5: Mistrater discloses the substrate is a drum (figures, examples).

Claim 6: Mistrater in view of Pinsly and Cia fails to disclose the pull rate is less than the vertical flow rate, however, Mistrater discloses pull rate of 185 mm/min and vertical flow rates up to 300 mm/min (examples, column 13, lines 25-45). Therefore it would have been obvious to one of ordinary skill in the art to have selected a pull rate

less than a vertical flow rate because Mistrater discloses such as known and suitable in the art. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.,* 325 U.S. 327, 65 USPQ 297 (1945).

Claim 7: Mistrater discloses a pull rate and vertical velocity and therefore such must result in a differential rate as required by the claim.

Claim 8-10: The limitations of these claims are discussed above.

Claims 11-12: Pinsly discloses setting viscosity predetermined amounts during the control process to impart the substrate with a uniform thickness and therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the viscosity predetermined amounts used in the process of Mistrater in view of Pinsly and Cia ,through routine experimentation, to impart the substrate with a uniform thickness.

Claims 13-16: Mistrater in view of Pinsly and Cia suggests adjusting the flow rate of the solution through the coating bath due to the sensed viscosity being above a predetermined setpoint, however, the references fail to explicity disclose returning the flow rate to the initial flow rate when the sensed viscosity is within a second predetermined amount. However, as outlined above, such a modification would have been obvious to one of ordinary skill in the art because the reference teach that the viscosity and the flow rate are interdependent on the coating thickness uniformity. Therefore, if the viscosity changes due to coating conditions then the relative solution flow rate can also be changed to result in a constant thickness throughout the coating

process. Therefore if the second predetermined viscosity is sensed as being lower then the predetermined "threshold" amount or half that amount as required by the claim, the flow rate should be adjusted to the initial flow rate that will result in a uniform coating thickness. It is the examiners position that such control processes are well within the skill of one ordinary in the art.

Additionally, it is the examiners position that the claimed invention is merely a predictable use of prior art elements (control systems, vertical flow rate and viscosity) as discloses by Mistrater in view of Pinsly and Cia to produce the established function of the prior art elements (a uniform thickness). *See KSR Int'l Inc. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Turocy/
Patent Examiner
AU 1762

FRED J. PARKER
PRIMARY EXAMINER